

[0037] The display 120 cooperates with display driver 122 to display paginated content such as text-based information. For example, display 120 may be used to display pages from electronic books. The paginated content may be primarily in the form of text, although other information such as images, video clips and animation, may also be presented on display 120. In an embodiment, first memory 144 corresponds to non-volatile memory for computing device 100. The first memory 144 stores a data collection corresponding to the paginated content. The processor 140 accesses first memory 144 to retrieve the data. The processor 140 combines with display driver 122 to present the data in a paginated format on display 120.

[0038] To present a selected page, processor 140 accesses first memory 144 for values in the data collection that are assigned to the selected page. Each selected page of the paginated content is presentable on display 120 while other pages are cached in second memory 146. Alternatively, the data collection may be signaled to processor 140 from a peripheral device, through first peripheral port 102 or wireless peripheral port 104. Either first memory 144 or second memory 146 may be used to store portions of the data collection received from the peripheral device. The second memory 146 may be used to buffer or cache the data collection while one or more of the pages from the data collection is being displayed.

[0039] The sensor 130 is used to detect a deflection entered as input by a user. The deflection input may be measured as an analog value that is signaled to processor 140. The deflection input causes portions of one or more pages from the data collection to be displayed on at least a portion of display 120. The deflection is measured by sensor 130 for processor 140. In this way, the user may deflect a component of computing device 100 to signal an input to the processor 140. The processor uses a detected value of the input to present multiple pages on all or portions of display 120 over the course of a selected time period. As will be further described, embodiments of the invention allow for sensor 130 to detect deflection created on sensor 130, display 120, on a printed circuit board (PCB) of computing device 100, on a housing of computing device 100, or on a combination of sensor 130 and another component of computing device 100. The deflection may simulate the bending of a book or stack of pages, prior to their pages being flicked.

[0040] In an embodiment, the analog value measured by sensor 130 reflects the magnitude of the deflection, as well as other characteristics such as its duration, or flick speed. To process the information detected by sensor 130, AD converter 134 is coupled to receive the analog input from sensor 130. The AD converter 134 converts the analog input into a digital format for processing by processor 140. The AD converter 134 may also include several channels to receive other analog inputs or values from other components. For example, one of the channels 136 may be coupled to a digitizer 260 (see FIG. 5-7) of computing device 100 to detect position information of a stylus in contact with display 120.

[0041] FIG. 5 is a top view of computing device 100, illustrating positioning of a sensor device 230, under an embodiment of the invention. The sensor device 230 may perform functions as described with sensor 130 (FIG. 4), but is combined or housed within a deflectable structure. The sensor device 230 may be combined with another deflectable component (such as display 120) to correlate the deflection of the sensor device 230 with deflection of the other component.

[0042] In an embodiment shown by FIGS. 2 and 3, computing device 100 is a tablet having a length L extending between a top 207 and a bottom 209. A width W extends between lateral sides 203, 203. A housing 210 of computing device 100 retains display 120 (FIG. 1), as well as housing other components. The housing 210 retains a digitizer 260 in cooperation with display 120. Among other functionalities provided, digitizer 260 enables input to be entered onto display 120 through contact. The digitizer 260 detects the position of the contact and correlates the position contact with an input. The digitizer 260 may be positioned on top of display 120, or be overlaid by display 120. For the embodiment shown, digitizer 260 is assumed to be under display 120. In some computing device 100, digitizer 260 may extend beyond display 120 along the top edge 222, bottom edge 224, or one of the lateral edges 226, 228. In particular, for many types of devices, digitizer 260 may extend beyond the lateral edges 226, 228 of display 120.

[0043] With reference to FIG. 5, a top segment 217 of housing 210 measures the distance from a top edge 222 of display 220 and a top 207 of computing device 100. A bottom segment 219 of housing 210 measures the distance from a bottom edge 224 of display 220 and a bottom 209 of computing device 100. A first lateral segment 213 of housing 210 measures the distance from one of the lateral sides 203 and a lateral edge 226 of display 220. Similarly, a second lateral segment 215 of housing 210 measures the distance from the other one of the lateral sides 203 and another lateral edge 228 of display 220.

[0044] In an embodiment, sensor device 230 is positioned within housing 210 on or adjacent to an exterior surface. For example, a front panel 212 of housing 210 may provide access to display 220. The sensor device 230 may be positioned directly underneath front panel 212. To this end, sensor device 230 is positioned apart from display 220 and digitizer 260. In one embodiment, sensor device 230 is positioned on top segment 217 of housing 210. To enable sensor device 230 to measure a deflection, both housing 210 and sensor device 230 may be configured to bend or cantilever. The display 220 and digitizer 260 may be similarly configured. For sensor device 230 such as described with FIGS. 4 and 5, the direction of bending would cantilever top segment 217 into the paper.

[0045] FIG. 6 illustrates another embodiment in which sensor device 230 is positioned lengthwise within housing 210 of computing device 100, so as to extend between top 207 and bottom 209. Since digitizer 260 may extend towards lateral side 203, sensor device 230 may be positioned underneath both display 220 and digitizer 260. The first lateral segment 213 may overlay at least a portion of sensor device 230 and digitizer 260. The sensor device 230 is deflective to measure a deflection entered by the user. To accommodate the deflection, housing 210, display 220, and digitizer 260 may deflect with sensor device 230, so that lateral side 203 of computing device 100 nearest sensor device 230 deflects into the paper.

[0046] With reference to FIGS. 5 and 6, display 220 may be described with reference to a deflected region 225. The deflected region 225 may coincide to a portion of display 220 where presentation of the data collection is altered as a result of the deflection created by the user. The deflected region 225 may also coincide with a region of display 220 that is the boundary of physical deflection on display 220. The deflected region 225 may be positioned center or off-center to best suit positioning of sensor device 230. For example, if one of the lateral sides 203 is deflectable, deflected region 225 may be